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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,871	02/25/2005	Akira Hommi	12699/19	2062

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EXAMINER	
NGUYEN, CHUONG P	
ART UNIT	**PAPER NUMBER**
3663	

MAIL DATE	DELIVERY MODE
09/14/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/525,871	HOMMI ET AL.	
	Examiner	Art Unit	
	Chuong Nguyen	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-17* is/are pending in the application.

4a) Of the above claim(s) *5-17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's 06/28/2007 Amendment, which directly traversed the rejection of the claims of the 10/10/2006 Office Action are acknowledged.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 2-4, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Togai et al (5,694,901) in view of Fuhrer et al (6,532,407).

Regarding claim 2, Togai et al disclose the road surface condition change estimation apparatus comprising: a rotation angular acceleration measurement module (i.e. angular acceleration detecting means) that measures a rotation angular acceleration of a drive shaft,

which is mechanically linked to drive wheels of the automobile (Fig 1, 15, 16 "107"; Fig 13; col 21, line 4+). Togai et al do not explicitly disclose a condition change estimation module that estimates the change of the road surface condition, based on a variation in period of a time change of the measured rotation angular acceleration that increases to or over a predetermined reference value. Fuhrer et al teach in the same field of endeavor a condition change estimation module that estimates the change of the road surface condition, based on a variation in period of a time change of the longitudinal acceleration and/or rotational acceleration measured by the acceleration sensor that increases to or over a predetermined reference value (i.e. threshold values) (Fig 1 "10, 12, 13"; Fig 3a, 3b "S1, S2, -S1, -S2"; Fig 4; col 1, lines 34-61; col 2, line 25 – col 4, line 55). Thus it would have been obvious to one of ordinary skill in the art to substitute the longitudinal acceleration and/or rotational acceleration measured by the acceleration sensor as taught by Fuhrer et al with the measured rotation angular acceleration as taught by Togai et al for the predictable result of estimating the change of the road surface condition, since it has been held that simple substitution of one known element for another to obtain predictable results involves only routine skill in the art.

Regarding claim 3, Togai et al disclose a rotation angular acceleration measurement module but do not explicitly disclose the condition change estimation module estimates the change of the road surface condition, in response to a variation in period of a time change of the measured rotation angular acceleration at or over a predetermined rate. Fuhrer et al teach in the same field of endeavor the condition change estimation module estimates the change of the road surface condition, in response to a variation in period of a time change of the longitudinal acceleration and/or rotational acceleration measured by the acceleration sensor at or over a

predetermined rate (Fig 1 "10, 12, 13"; Fig 3a, 3b "S1, S2, -S1, -S2"; Fig 4; col 1, lines 34-61; col 2, line 25 – col 4, line 55). Thus it would have been obvious to one of ordinary skill in the art to substitute the longitudinal acceleration and/or rotational acceleration measured by the acceleration sensor as taught by Fuhrer et al with the measured rotation angular acceleration as taught by Togai et al for the predictable result of estimating the change of the road surface condition, since it has been held that simple substitution of one known element for another to obtain predictable results involves only routine skill in the art.

Regarding claim 4, Togai et al disclose a rotation angular acceleration measurement module but do not explicitly disclose the condition change estimation module estimates an abrupt increase in friction coefficient on the road surface, when the period of the time change of the measured rotation angular acceleration in an opposite peak detected immediately after a first peak, which appears after an increase of the rotation angular acceleration to or over a predetermined reference value, is shorter than the period of the time change in the first peak by or over the predetermined rate. Fuhrer et al teach in the same field of endeavor the condition change estimation module estimates an abrupt increase in friction coefficient on the road surface, when the period of the time change of the longitudinal acceleration and/or rotational acceleration measured by the acceleration sensor in an opposite peak detected immediately after a first peak, which appears after an increase of the longitudinal acceleration and/or rotational acceleration measured by the acceleration sensor to or over a predetermined reference value, is shorter than the period of the time change in the first peak by or over the predetermined rate (Fig 1 "10, 12, 13"; Fig 3a, 3b "S1, S2, -S1, -S2"; Fig 4; col 1, lines 34-61; col 2, line 25 – col 4, line 55). Thus it would have been obvious to one of ordinary skill in the art to substitute the longitudinal

acceleration and/or rotational acceleration measured by the acceleration sensor as taught by Fuhrer et al with the measured rotation angular acceleration as taught by Togai et al for the predictable result of estimating the change of the road surface condition, since it has been held that simple substitution of one known element for another to obtain predictable results involves only routine skill in the art.

5. While patent drawings are not drawn to scale, relationships clearly shown in the drawings of a reference patent cannot be disregarded in determining the patentability of claims. See In re Mraz, 59 CCPA 866, 455 F.2d 1069, 173 USPQ 25 (1972).

6. The statements of intended use or field of use (i.e. claim 2 – that estimates, that measures; claims 3-4 – estimates) and "when" clauses (i.e. claim 4) are essentially method limitations or statements of intended or desired use. Thus, these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference.

See MPEP § 2114 which states:

> A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim.
>
> Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions.
>
> Apparatus claims cover what a device is not what a device does.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

Response to Arguments

7. Applicant's arguments with respect to claims 2-4 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. The cited prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong Nguyen whose telephone number is 571-272-3445. The examiner can normally be reached on 8:00 - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CN

JACK KEITH
SUPERVISORY PATENT EXAMINER